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JAPANESE PATENT OFFICE

## PATENT ABSTRACTS OF JAPAN

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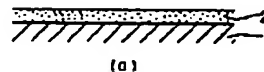
**H01L 21/027****G03F 7/11****G03F 7/40****H01L 21/3065**(21) Application number: **07291420**(71) Applicant: **NEC CORP**(22) Date of filing: **09 . 11 . 95**(72) Inventor: **YOSHINO HIROSHI**(54) **FORMING METHOD OF RESIST PATTERN**

(57) Abstract:

**PROBLEM TO BE SOLVED:** To prevent a resist pattern from deteriorating in shape without varying it in dimensions through a small number of processes when an anti-reflection film is etched by a method wherein an antireflection film is applied onto a silicon substrate and converted into silyl by heating carried out under specific conditions.

**SOLUTION:** An anti-reflection film 2 formed of novolak resin which contains light absorbing dye is applied onto a silicon substrate 1 and heated at a temperature of 200°C in an atmosphere of hexamethyldisilazan for five minutes to be converted to silyl. Then, resist is applied onto a silylated antireflection film 3, exposed to light through a KrF excimer laser stepper, and developed for the formation of a resist pattern 4. Then, the antireflection film 3 is etched with  $CF_4$  gas using the resist pattern 4 as a mask. By this setup, a good resist pattern which is restrained from deteriorating in shape can be obtained.

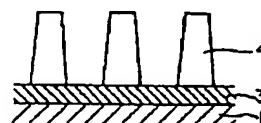
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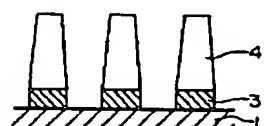
(a)



(b)



(c)



(d)